

**REMARKS**

Continued examination and favorable reconsideration of the above-identified application are respectfully requested. Claims 1-23 and 34 remain pending in the application. Claims 24-33 were previously canceled. No amendments have been made to the claims by this response. No new matter has been added.

**Rejection of Claims 1-23 and 34 Under 35 U.S.C. §103(a)**

At page 2 of the Office Action, claims 1-23 and 34 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hunt (U.S. Patent Application Publication No. US 2002/0110495) in view of Gifford (U.S. Patent No. 5,750,335). For the reasons set-forth below, this rejection is respectfully traversed.

Claim 1 clearly recites a method wherein a sample is introduced to a purification column after excess diluent is removed from the purification column to make the purification column free of excess diluent. Further, claim 1 makes it clear that the sample is introduced after the removed excess diluent is collected in an output reservoir. The sample is introduced after, not during or before, excess diluent is removed from the purification column and collected in the output reservoir. Also, according to the claimed invention, the diluent in the purification column that is removed prior to introducing the sample, is not used as a wash solution or an equilibrating solution, but rather, as a diluent for saturating purification material in the purification column.

Further, unlike the claimed invention, Hunt does not teach or suggest introducing fluid sample into the purification column after moving excess diluent to an output reservoir and mixing the purified sample with the removed diluent in the output reservoir. In Hunt, the target substance

is retained in the purification column and must be eluted from the column with an eluent (*see*, paragraphs [0091] and [0092]). Thus, while the target substance is retained, solvent, buffer, and other undesirable substances that may be present in the column are allowed to flow through the column to the collection space beneath the column. One of ordinary skill in the art would discard the liquid that flows through and would not want to mix it with the very target from which it had been separated. Hunt does not teach or suggest collecting flow-through liquid for any re-use whatsoever, let alone in the collection space. Hunt also fails to teach or suggest mixing a target substance with a liquid that had been previously collected. Such an interpretation of Hunt would be unreasonable because the purpose of the purification column in Hunt is to separate the target substance from a sample. It is unreasonable to think one skilled in the art would combine a sample purified by a column, with the very contaminants that were removed from the column before the column was used to purify the sample.

In Hunt, the only liquid with which the target substance could desirably be mixed with is the eluent used to elute the target substance from the column. The eluent, however, is introduced into the purification column after the sample is introduced, not before the sample is introduced. As acknowledged by the Examiner, "Hunt fails to teach providing and removing excess diluent prior to supplying the sample" (*see*, page 3, lines 6-7 of the Office Action). It is noted that the Examiner interprets the "liquid" mentioned in paragraph [0030] of Hunt as corresponding to the "diluent" recited in the present claims (*see*, page 3, lines 19-21 of the Office Action). Even given the Examiner's interpretation of the term "liquid," Hunt still does not teach or suggest the claimed method. The sample described in Hunt would not be introduced after (1) removing excess diluent to provide a column free of excess diluent, and (2) collecting excess diluent that has been removed,

in an output reservoir, as recited in the present claims. Instead, according to Hunt, the sample would be introduced during removal of the diluent, i.e., the introduction of the sample would act as the active force behind driving any excess liquid out of the column.

The Examiner states that, given the teachings in Hunt, it would have been obvious to mix the purified sample after elution with any remaining diluent flowing through the column (*see*, page 3 of the Office Action). Even if the Examiner's position were correct and diluent would in fact continue flowing through the column after elution, as suggested by the Examiner, the claimed method would still not result. Hunt does not teach or suggest introducing a fluid sample into a purification column after moving excess diluent from the column to provide a column that is free of excess diluent. Moreover, Hunt fails to teach or suggest collecting any liquid in an output reservoir, and thereafter mixing a purified sample with the collected liquid in the output reservoir. Accordingly, Hunt does not teach or suggest the present claims.

Gifford fails to overcome the deficiencies of Hunt. Column 28, lines 8-9 of Gifford, to which the Examiner refers, merely describe that a spin column is washed and equilibrated with assay buffer before the spin column is used. Gifford fails to teach or suggest removing buffer from the spin column to make the spin column free of excess diluent, and collecting the removed assay buffer in an output reservoir, before introducing a sample to the spin column. Moreover, Gifford fails to teach or suggest mixing collected spent assay buffer with a purified sample. In fact, there would be no apparent reason whatsoever for collecting the spent assay buffer that was used to wash the spin column before the spin column is used, because it would be expected that the spent assay buffer would contain contaminants and/or undesired ionic species resulting from the washing and equilibration treatment of the spin column. It would not have been predictable nor obvious to mix a

processed sample with the same contaminants the wash solution was designed to remove from the spin column.

Those skilled in the art might think to wash a spin column prior to use so that contaminants, for example, unwanted ionic species, can be removed from the column so that they do not interfere with the processing of a sample through the spin column. Nothing whatsoever in Column 28, lines 8-9 of Gifford, or anywhere else in Gifford, suggests collecting a spent wash buffer so that it can be mixed with a processed sample.

Moreover, it is also noted that Gifford describes washing the spin column six times “after the reaction was added to the spin column,” and then eluting the target substance from the column (*see*, column 28, lines 9-12 of Gifford). Again, Gifford fails to teach or suggest collecting any of the aliquots of the spent wash buffer from those six washes.

Furthermore, with regard to claim 34, it is desirable to increase the volume of a very small sample to facilitate loading the sample into an analysis device, for example, into a capillary electrophoresis instrument. Purification columns for accommodating volumes in the range of from one nanoliter to about 75 microliters are neither disclosed nor suggested by Hunt, Gifford, or the combination of these references.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **CONCLUSION**

For at least the reasons discussed in detail above, Applicant submits that all pending claims are patentable over the applied references. Withdrawal of all rejections and timely issuance of a Notice of Allowance are respectfully requested.

U.S. Patent Application No. 10/628,281

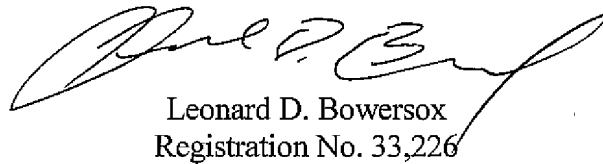
Request for Reconsideration After Final Office Action dated January 26, 2009

In Response to the Final Office Action Mailed October 30, 2008

Should the Examiner deem that any further action by Applicant or Applicant's undersigned representative is desirable and/or necessary, the Examiner is invited to telephone the undersigned at the number set forth below.

If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



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